

**To:** Card, Joan[Card.Joan@epa.gov]; Cristiano, Gina[Cristiano.Gina@epa.gov]  
**Cc:** Hestmark, Martin[Hestmark.Martin@epa.gov]; McComb, Martin[McComb.Martin@epa.gov]; Smith, Paula[Smith.Paula@epa.gov]; McClain-Vanderpool, Lisa[McClain-Vanderpool.Lisa@epa.gov]  
**From:** McKean, Deborah  
**Sent:** Fri 8/7/2015 10:57:57 PM  
**Subject:** RE: New version of pH description

Sorry, I was asked to coordinate with R6 and ATSDR. So, already sent the data and our statement to R6 tox folks.

**From:** Card, Joan  
**Sent:** Friday, August 07, 2015 4:52 PM  
**To:** McKean, Deborah; Cristiano, Gina  
**Cc:** Hestmark, Martin; McComb, Martin; Smith, Paula; McClain-Vanderpool, Lisa  
**Subject:** RE: New version of pH description

Deb, I am sending the statement to RAs, so we are using one statement that I will originate. Please don't share yet.

**From:** McKean, Deborah  
**Sent:** Friday, August 07, 2015 4:51 PM  
**To:** Cristiano, Gina; Card, Joan  
**Cc:** Hestmark, Martin; McComb, Martin; Smith, Paula; McClain-Vanderpool, Lisa  
**Subject:** RE: New version of pH description

Yes, I am coordinating with Region 6 tox. I am also giving them our message, letting them know it is consistent with ATSDR and asking that they are also consistent.

**From:** Cristiano, Gina  
**Sent:** Friday, August 07, 2015 4:47 PM  
**To:** Card, Joan  
**Cc:** McKean, Deborah; Hestmark, Martin; McComb, Martin; Smith, Paula; McClain-Vanderpool, Lisa  
**Subject:** Re: New version of pH description

Deb-are you coordinating this w R6 toxicologist? They are very interested in what we're saying...?

Sent from my iPhone

On Aug 7, 2015, at 4:44 PM, Card, Joan <[Card.Joan@epa.gov](mailto:Card.Joan@epa.gov)> wrote:

Thank you. I'm going to add the following to the beginning of the statement. Is it correct?: The following is an summary of the evaluation of pH data collected as of [what date?]. Additional information related to additional data, including metals, is being developed and will be provided in a separate statement.

**From:** McKean, Deborah  
**Sent:** Friday, August 07, 2015 4:39 PM  
**To:** Hestmark, Martin; Card, Joan  
**Cc:** Cristiano, Gina; McComb, Martin  
**Subject:** New version of pH description

pH (a measure of acidity) was measured at a number of locations along Cement Creek and the Animas River to Durango and beyond to Farmington, New Mexico. Except for locations within Cement Creek, generally, pH levels were measured before the arrival of the contaminant plumb and found to range between 6.5 and 7.6. When the contaminated water from the mine rupture passed a sampling location, the pH lowered (indicating more acid) to approximately 4.8 (below Silverton). A pH of 4.5 is consistent with the pH of a liquid like black coffee. Later, however, in locations down river, the pH began to return to pre-incident levels. Water acidity levels in the Animas above Cement Creek have been consistent over the past two days at approximately 6.4 to 6.8. The pH of saliva is roughly 6 and the pH of pure water is 7. The acidity level in Cement Creek has remained low at 3.74 since the mine rupture. Tomato juice and apples also have a pH of approximately 3.74.

<image001.png>

**Deborah L. McKean, Ph.D.**

Chief, Superfund Technical Assistance

U.S. EPA, Region 8

1595 Wynkoop Street

Denver, CO 80202

Office: 303-312-6178

Cell: 303-579-4371